

REQUEST FOR RECONSIDERATION

Claims 1, 2 and 5-18 remain active in this application.

The claimed invention is directed to a method of forming metallization and contact structures in an integrated circuit.

Increased demands on semiconductor architecture promote investigation for efficient methods for making integrated circuits. Typically, it is necessary to have conductive contacts to active regions of a semiconductor substrate which are conductively linked via metallization layers. Efficient methods for forming such structures are sought.

The claimed invention addresses this problem by providing a method of forming both metallization and contact structures in an integrated circuit in which, sequentially, a trench is etched in a trench dielectric layer, a contact opening is etched in a substantially planar contact dielectric layer and a conductive material is deposited resulting in formation of a contact structure and a metallization. Such a method is nowhere disclosed or suggested in the cited prior art of record.

The rejection of Claims 1-2 and 5-18 under 35 U.S.C. § 103(a) over Schnabel et al. U.S. 6,544,951 in view of Lucas et al. U.S. 6,287,951 is respectfully traversed.

Schnabel et al. fails to disclose or suggest a method in which a trench is etched followed by etching a contact opening and a conductive material is deposited into the contact opening and the trench to form a contact structure in the contact opening and a metallization in the trench.

Schnabel et al. describes a process in which contacts **207a**, **236a**, and **228a** are first formed on a silicon chip (Figure 7). Thereafter, as illustrated in Figure 8, a planarized layer of dielectric **225B** is formed, allowing for openings **32**, **33**, **34**, and **35** to be formed. As such, this reference sequentially forms contact openings and a contact structure, followed by formation of a metallization layer/via conductor in openings **35** and **32** (column 8, lines 37-

40). Thus, the reference fails to disclose or suggest a method in which, in sequential order, a trench is formed in a trench dielectric layer, a contact opening is formed in a contact dielectric layer, then as a result of depositing a conductive material, a contact structure is formed in the contact opening and a metallization is formed in a trench.

In contrast, the present invention is directed to a method in which a trench and a contact opening are sequentially formed in a trench dielectric layer and a contact dielectric layer followed by deposition of a conductive material to form a contact structure and a metallization. As the cited reference fails to disclose or suggest the formation of trench and contact opening structures in the sequence as claimed, the present invention is clearly not obvious from the cited reference and accordingly withdrawal of the rejection under 35 U.S.C. § 103 is respectfully requested.

The basic deficiencies of the prior reference are not cured by Lucas et al.

Lucas et al. has merely been cited as evidence of the removal of a patterned photoresist after an etching step. However as Schnabel et al. fails to disclose or suggest the proper sequence of formation of trenches and contact openings, the teaching supplied by Lucas et al. fail to cure the basic deficiencies of the primary reference. In view of these deficiencies, withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

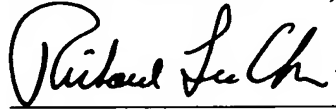
The rejection of claims 1, 2, and 5-18 under 35 U.S.C. § 101 over claims 1-16 of U.S. 6,635,566 is acknowledged.

As noted in applicants' preliminary amendment of November 17, 2003, the present claims are acknowledged as identical to those of U.S. 6,635,566 and were submitted in order to obtain consideration of an information disclosure statement. Upon the indication of allowability over the rejection for obviousness based on Schnabel et al. and Lucas et al., the examiner is invited to indicate such in written communication indicating that the only basis for rejection would be for statutory double patenting.

But for the statutory double patenting rejection, applicants respectfully submit this application is otherwise in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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